Amendments to the Claims

Please amend the claims to read as follows:

1. (Currently Amended) ~~Process for~~ A method of keeping a tuyere passing through a metallurgical vessel free of a skull ~~by intermittendly~~, the method comprising intermittently passing an oxygen-containing gas through the tuyere to dissolve the skull, wherein it is determined that an interval for passing said oxygen-containing gas through the tuyere needs to be started by detecting electromagnetic radiation emanating from a spot in the interior of the melt by means of a dual wavelength pyrometer and comparing the intensity of the pyrometer signals with the ratio of the pyrometer signals, and initiating said interval for passing said oxygen-containing gas through the tuyere, upon the condition that the combined intensity of the signals falls below a predetermined threshold value and that the ratio of the signals remains substantially constant.

2. (Original) The method of claim 1 wherein said threshold value is determined by using a video camera which is arranged with the pyrometer along one optical path and by setting into relation the intensity of the pyrometer signal with the image of the video camera, deciding on the basis of the video image whether a status of clogging is reached and determining the corresponding intensity value of the combined pyrometer signals.

3. (Currently Amended) ~~Use of a video detector (18) for~~ A method of measuring electromagnetic radiation emanating from the interior of a metallurgical vessel, the method comprising adjusting the optical axis of a measuring unit ~~(3)~~ including a video detector ~~(18)~~ and an instrument ~~(16,17)~~ for measuring the electromagnetic radiation ~~emanating from the interior of a metallurgical vessel (2)~~ through a tuyere having a first end facing the interior of the metallurgical vessel and a second end facing the instrument, wherein said ~~measu8ring~~ measuring unit ~~(3)~~ is arranged along an optical path, and the adjustment is carried out on the basis of the video image by varying the orientation of the measuring unit ~~(3)~~ such that the first end and second end in the video image form concentric circles.

4. (Currently Amended) ~~Use according to~~ The method of claim 3 wherein said instrument for measuring electromagnetic radiation is a pyrometer .

5. (Currently Amended) ~~Use according to~~ The method of claim 3 wherein said instrument for measuring electromagnetic radiation is a spectrometer.

6. (Original) A method for measuring the length of a tuyere passing through a metallurgical vessel having a first end facing the interior of said metallurgical vessel and a second end facing the exterior of said metallurgical vessel by means of an autofocus video camera, wherein the lens system of the autofocus video camera is adjusted so that the first end of the tuyere facing the interior of said metallurgical vessel is in focus and the length of said tuyere is determined on the basis of the distance of the focus and the known position of said second end of the tuyere with respect to the camera.

7. (Currently Amended) ~~Apparatus~~ An apparatus for carrying out the ~~processes of claims 1 to 6~~ method of claim 1, the apparatus comprising:
(a) a dual wavelength pyrometer,
(b) an autofocus video camera which is aligned with said dual wavelength pyrometer along one optical path, and
(c) means for varying the orientation of the optical path~~, and~~
~~(d) optionally a further detector for measuring electromagnetic radiation emanating from the interior of the vessel~~.

8. (Currently Amended) ~~Apparatus according to~~ The apparatus of claim 7 further comprising a laser device suitable for creating a plasma in the interior of said metallurgical vessel, and wherein the further detector is a spectrometer capable of detecting electromagnetic radiation emanating from said plasma.

9. (Currently Amended) ~~Apparatus according to~~ The apparatus of claim 7 ~~or 8~~ which is connected to the interior of said metallurgical vessel by means of a tube which is passed through the tuyere.

10. (New) The apparatus of claim 7, further comprising:

(d) a further detector for measuring electromagnetic radiation emanating from the interior of the vessel.

11. (New) An apparatus for carrying out the method of claim 3, the apparatus comprising:

(a) a dual wavelength pyrometer,

(b) an autofocus video camera which is aligned with said dual wavelength pyrometer along one optical path, and

(c) means for varying the orientation of the optical path.

12. (New) The apparatus of claim 11 further comprising a laser device suitable for creating a plasma in the interior of said metallurgical vessel, and wherein the further detector is a spectrometer capable of detecting electromagnetic radiation emanating from said plasma.

13. (New) The apparatus of claim 11 which is connected to the interior of said metallurgical vessel by means of a tube which is passed through the tuyere.

14. (New) The apparatus of claim 11, further comprising:

(d) a further detector for measuring electromagnetic radiation emanating from the interior of the vessel.

15. (New) An apparatus for carrying out the method of claim 6, the apparatus comprising:

(a) a dual wavelength pyrometer,

(b) an autofocus video camera which is aligned with said dual wavelength pyrometer along one optical path, and

(c) means for varying the orientation of the optical path.

16. (New) The apparatus of claim 15 further comprising a laser device suitable for creating a plasma in the interior of said metallurgical vessel, and wherein the further detector is a spectrometer capable of detecting electromagnetic radiation emanating from said plasma.

17. (New) The apparatus of claim 15 which is connected to the interior of said metallurgical vessel by means of a tube which is passed through the tuyere.

18. (New) The apparatus of claim 15, further comprising:

(d) a further detector for measuring electromagnetic radiation emanating from the interior of the vessel.